

LiM 2017 Advance Program, Sunday, 25.6.2017

12:00 -
18:00 Registration at the LiM-counter in the ICM

LiM 2017 Advance Program, Monday, 26.6.2017

07:30 Registration at the LiM-counter in the ICM

ICM Ground Floor/1st Floor, Room 1

WoP Opening and Plenary Session

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| 09:00 - 11:00 | WoP-Opening Ceremony and Plenary Session | <i>World of Photonics Congress</i> |
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Coffee break

ICM 1st Floor, Room 13b

LiM Plenary Session and WLT ceremony, Chair M. Schmidt & L. Overmeyer

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| 11:15 - 11:25 | Welcome to LiM | <i>Ludger Overmeyer (LiM General Chair) Michael Schmidt (WLT-President)</i> |
| 11:25 - 11:50 | Additive Biomanufacturing for Regenerative Medicine | <i>Paulo J. Bartolo CDRsp, Polytechnic Institute of Leiria, Rua de Portugal</i> |
| 11:50 - 12:15 | 50 years of combining a focussed laser beam with a high pressure gas jet. Then and now. | <i>Paul Hilton TWI, Cambridge</i> |
| 12:15 - 12:40 | Making magic X3 - novel ultrafast laser interaction physics in transparent materials | <i>Peter Herman Department of Electrical and Computer Engineering, University of Toronto</i> |
| 12:40 - 12:50 | WLT Award Ceremony | <i>Michael Schmidt WLT-President</i> |
| 12:50 - 13:10 | Prize Winning Topic Presentation | <i>Prize Winner</i> |

Lunch

| LiM 2017 Advance Program, Monday, 26.6.2017 | | LiM 2017 Advance Program, Monday, 26.6.2017 | | LiM 2017 Advance Program, Monday, 26.6.2017 | |
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| ICS Room 2, 1st Floor | | ICS Room 3, 1st Floor | | ICS Room 22B, 2nd Floor | |
| <i>Joining (Welding and Brazing) (Mo_2_1), B. Graf</i> | | <i>Ablation, Drilling, and Micro-Cutting (Mo_3_1), A. Ostendorf</i> | | <i>System Technology and Process Control (Mo_22B_1), J. Hauptmann</i> | |
| 14:30 - 14:45 | Laser welding of HCT980XD at subzero temperatures to improve Heat Affected Zone material properties <i>Simon Olschok Benjamin Gerhards, Uwe Reisgen RWTH Aachen University ISF Welding and Joining Institute</i> | Direct Laser Interference Patterning: from fundamentals to industrial applications <i>Tim Kunze Andrés Fabián Lasagni Fraunhofer IWS Dresden</i> | | New approach for all-in-one control of galvanometer scanners <i>Peter Rauscher Thomas Schwarz, Jan Hauptmann, Andreas Wetzig, Eckhard Beyer Fraunhofer IWS Dresden</i> | |
| 14:45 - 15:00 | | | | Observing process zone temperature fields for process characterization <i>Dieter Tyralla Joerg Volpp, Viktor Hohenäcker, Hannes Freiße, Nils Bracke, Frank Silze, Michael Schnick, Claus Thomy BIAS - Bremer Institut fuer angewandte Strahltechnik GmbH</i> | |
| 15:00 - 15:15 | Laser Beam Welding in mobile Vacuum <i>Niklas Holtum Uwe Reisgen, Simon Olschok, Stefan Jakobs Institut für Schweißtechnik und Fügetechnik</i> | Influencing the ablation efficiency in ultra-short pulse laser micro structuring by using a deformable mirror for beam shaping <i>Marco Smarra Klaus Dickmann Laser Center of the University of Applied Sciences Muenster</i> | | Laser joining improvement and prediction of the quality of the joint of metal-composite samples using a control and supervision system for temperature and clamping force <i>Maite Andrés Fernando Liébana, Mercedes Ferras, Iker Villarón, Eneko Ukar Tecnalia</i> | |
| 15:15 - 15:30 | The influence of ambient pressure during laser beam welding of aluminium high pressure die castings on the occurrence of weld bead porosity <i>Fabian Teichmann Sebastian Müller, Klaus Dilger Technische Universität Braunschweig</i> | Excimer lasers machining of low density inorganic material <i>Isabelle Geoffroy Rémy Bourdenet, Cédric Chicanne, Marc Théobald CEA</i> | | Power Management of Randomly Modulated and Pulsed Laser Systems <i>Ilya Bystryak QPEAK</i> | |
| 15:30 - 15:45 | Laser Beam Welding in Vacuum of Dissimilar Metals for Surgical Instruments <i>Christian Otten Stephan Klein Aachen University of Applied Science</i> | Multi-axis Positioning Approach for Precise Sharpening of Monolithic Cutting Tools by USP Laser Processing <i>Adam Čermák Pavel Kozmin University of West Bohemia</i> | | Laser beam shape monitoring as a quality control tool in material processing <i>Nick Harrop Rolf Klein, Harald Schwede PRIMES GmbH</i> | |
| 15:45 - 16:00 | Three-dimensional X-ray transmission in-situ observation of spatter formation and reduction in laser welding of stainless steel <i>Yosuka Kawahito Kouji Nishimoto, Hiroshi Kawakami, Seiji Katayama Osaka university</i> | Ultrafast z-scanning for high efficiency laser micro-machining <i>Ting-Hsuan Chen Romain Fardel, Craig Arnold Princeton University</i> | | Realization and First Time Operation of a High Power Laser-Water-Jet System <i>Florian Schmidt Christian Brecher, Henning Janssen Fraunhofer Institute for Production Technology IPT</i> | |
| Coffee break | | Coffee break | | Coffee break | |
| <i>Joining (Welding and Brazing) (Mo_2_2), B. Graf</i> | | <i>Ablation, Drilling, and Micro-Cutting (Mo_3_2), A. Ostendorf</i> | | <i>System Technology and Process Control (Mo_22B_2), A. Wetzig</i> | |
| 16:30 - 16:45 | Detecting and utilizing reflected radiation in laser beam brazing <i>Thomas Seefeld Christoph Mittelstädt BIAS - Bremer Institut für angewandte Strahltechnik GmbH</i> | Fabrication of PMN-PT piezoelectric actuators with ultrashort pulses <i>Giovanni Piredda Sandra Stroj, Javier Martín-Sánchez, Rinaldo Trotta, Armando Rastelli Fachhochschule Vararberg</i> | | Advanced Pierce Detection by Intrinsic Fiber Laser Diagnostics <i>Andrew Mark Richmond Stephen John Keen SPI Lasers</i> | |
| 16:45 - 17:00 | Investigation of solidification cracking susceptibility of type 316L stainless steel during laser beam welding using an in-situ observation technique <i>Nasim Bakir Andrey Gumenyuk, Michael Rethmeier BAM Federal Institute for Materials Research and Testing</i> | Rotary 2.5D Pulsed Laser Ablation <i>Maximilian Georg Warhanek Joaquin Pfaff, Johannes Gysel, Konrad Wegener ETH Zurich</i> | | A New Parametric Model for 3D Laser Remote Scanner Systems <i>Thomas Krähling Georg Cerwenka, Jörg Wollnack, Claus Emmelmann Hamburg University of Technology</i> | |
| 17:00 - 17:15 | High-strength welding of aluminum-lithium alloy of Al-Cu-Li systems <i>Anatolii Mitrofanovich Orishich Alexander Gennadievich Malikov Khristianovich Institute of Theoretical and Applied Mechanics SB RAS</i> | Galvanometer Scanning Technology and 9.3µm CO2 Lasers for On-The-Fly Converting Applications <i>Malte Hemmerich Mohammad Darvish, Justin Conroy, Ray Silta, Hai Vo, Xi Luo, Rinaldo Galdamez, Jin Li Cambridge Technology</i> | | Study of laser wobbling welding process through the radiation of plasma plume <i>Libor Mrna Petr Hornik, Petr Jedlička, Jan Pavelka Institute of Scientific Instruments of the ASCR</i> | |
| 17:15 - 17:30 | Development of the methods of scandium utilization at the laser welding of aluminum alloys of Al-Cu-Li and Al-Mg-Li systems <i>Alexander Gennadievich Malikov Khristianovich Institute of Theoretical and Applied Mechanics SB RAS</i> | Compact and ultra-flexible Gauss to Top-hat Beam Shaping with Aspheres <i>Ulrike Fuchs Anna Moehl, Sven Wickenhagen asphericon GmbH</i> | | 193 & 248 nm high power lasers for the micro and macro material processing <i>Junichi Fujimoto Koji Kakizaki, Masakazu Kobayashi, Hiroaki Ozumi, Toshio Mimura, Hakaru Mizoguchi Gigaphoton Inc.</i> | |
| 17:30 - 17:45 | Mechanical and corrosionproperties of thin Hastelloy C-276 plate by pulsed laser welding with filler wire <i>Guangyi Ma Dongjiang Wu, Dongdong Wu, Mingkai Lei Dalian University of Technology</i> | New Picosecond Laser Technology for Micromachining in Microelectronics Manufacturing <i>Rajesh Patel Jim Bovatsek Spectra-Physics</i> | | Transformation of Weld Seam Geometry in Laser Transmission Welding by Using an Additional Integrated Thulium Fiber Laser <i>Anton Schmalzl Bastian Geißler, Frederik Maiwald, Tobias Laumer, Michael Schmidt, Stefan Hierl OTH Regensburg</i> | |
| 17:45 - 18:00 | | TruMicro ultrashort-pulse lasers for material processing – industrially-proven laser architectures for microprocessing <i>Max Kahmann Florian Kanal, Aleksander Budnicki, Christian Stolzenburg, Dirk Sutter Trumpf</i> | | Hollow core waveguide for simultaneous laser plastic welding <i>Felice Catania Luciano Scaltrito, Paolo Sirriani, Massimiliano Messere, Matteo Cocuzza, Simone Marasso, Francesco Perrucci, Candido Fabrizio Pirri, Sergio Ferrero, Stefano Bernard Politecnico di Torino</i> | |

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| ICS Room 2, 1st Floor | | ICS Room 3, 1st Floor | | ICS Room 22B, 2nd Floor | |
| <i>Joining (Welding and Brazing) (Tu_2_1), B. Graf</i> | | <i>Ablation, Drilling, and Micro-Cutting (Tu_3_1), A. Ostendorf</i> | | <i>System Technology and Process Control (Tu_22B_1), P. Abels</i> | |
| 08:30 - 08:45 | Effect of material gauge on laser weld pool mixing between dissimilar steels <i>Alexandre Métais Pierre Sallamand, Iryna Tomashchuk, Sadok Gaied ArcelorMittal</i> | High Precision Drilling with Ultra-Short Laser Pulses <i>Simone Russ Benjamin Führa, Max Kahmann, Andrey Andreev, Tim Hesse, David Diego-Vallejo, Patricia Hammers-Weber Trumpf Laser GmbH</i> | Extending Laser Metal Deposition Equipment as Cyber Physical Manufacturing Systems (Invited) <i>Pablo Romero Research Strategy Manager</i> | | |
| 08:45 - 09:00 | Perspectives of laser-beam welding of ultra-high steels <i>Martin Dahmen Stefan Lindner, Damien Manfort, Dirk Petring Fraunhofer-Institut für Lasertechnik</i> | Heat accumulation effects on efficiency during laser drilling of metals <i>Daniel Johannes Förster Rudolf Weber, Thomas Graf Insitut für Strahlwerkzeuge</i> | Twin Hexapod Operated Beam Expander and Dual Pyrocam Measurement for Laser Beam Path Optimization <i>Murad Aziz George Jamalieh Markus Bohrer, Bernhard Weinberger Dr. Bohrer Lasertec GmbH</i> | | |
| 09:00 - 09:15 | Laser Technologies in Modern Shipbuilding <i>Nikolay A. Nasyrev Nataliya A. Steshenkova Shipbuilding & Shiprepair Technology Center, JSC (JSC SSTC)</i> | Zero taper, fast drilling of high thickness metal parts <i>Giralamo Mincuzzi Marc Faucon, Thomas Hamoudi, Marie Fleureau, Rainer Kling Alphanov</i> | Time-resolved temperature measurement during laser marking of stainless steel <i>Martin Kučera Jiří Martan University of West Bohemia</i> | | |
| 09:15 - 09:30 | Joint tracking in zero gap laser butt welding using vision and spectroscopic sensing <i>Morgan Nilsen Fredrik Sikström, Anna-Karin Christiansson, Antonio Ancona University West</i> | Laser micro drilling of wing surfaces for hybrid laminar flow control <i>Hermann Uchtmann Dennis Haasler, Arnold Gillner Fraunhofer Institute for Laser Technology ILT</i> | Femtosecond processing with programmable spatial beams <i>Eric AUDOUARD Guillaume MACHINET, Amélie LETAN, Konstantin MISCHICHIK, Clemens HONNINGER, Eric MOTTAY, Yoann DIMAIO, Sébastien LANDON, Benjamin DUSSER AMPLITUDE SYSTEMES</i> | | |
| 09:30 - 09:45 | In situ, time-resolved, element specific measurements of vaporization during laser welding using laser-induced fluorescence <i>Brian Simonds Jeffrey W. Sowards, Paul A. Williams National Institute of Standards and Technology</i> | Picosecond-laser drilling limits for deep precision microholes in tool steel <i>Ehsan Zahedi Rudolf Weber, Christian Freitag, Thomas Graf, Christoph Würz, Georg Umlauf Institut für Strahlwerkzeuge</i> | Flexible, compact and picosecond laser capable four-beam interference setup <i>Alexander Peter Volkher Onuseit, Sebastian Faas, Christian Freitag, Thomas Graf Institut für Strahlwerkzeuge</i> | | |
| 09:45 - 10:00 | Modelling of temperature-controlled laser joining of aluminum and galvanized steel <i>Daniel Weller Florian Fetzer, Rudolf Weber, Thomas Graf Institut für Strahlwerkzeuge</i> | Percussion Drilling of Nickel Superalloy using Millisecond Quasi-CW Fibre Laser <i>Sundar Marimuthu Mohammad Antar, Phillip Hayward The Manufacturing Technology Centre Ltd</i> | | | |
| Coffee break | | Coffee break | | Coffee break | |
| <i>Joining (Welding and Brazing) (Tu_2_2), B. Graf</i> | | <i>Ablation, Drilling, and Micro-Cutting (Tu_3_2), A. Ostendorf</i> | | <i>System Technology and Process Control (Tu_22B_2), P. Abels</i> | |
| 10:30 - 10:45 | LASER 4.0 – The impact of digitalization on laser material processing (Invited) <i>Michael F. Zaeh Stefan Liebl, Alexander N. Fuchs Institute for Machine Tools and Industrial Management - Technical University of Munich</i> | Helical drilling of three-dimensional shaped holes using ultrashort laser pulses <i>Chao He Frank Zibner, Christian Fornaroli, Arnold Gillner Fraunhofer Institut für Lasertechnik ILT</i> | Laser-micro-processing with ultrashort pulses using flexible beam delivery <i>Beat Jaeggi Beat Neuenschwander, Stefan Remund, Sebastian Eilzer, Bjoern Wedel, Bastian Kruschke Bern University of Applied Sciences</i> | | |
| 10:45 - 11:00 | Laser beam Submerged Arc Hybrid Welding for thick metal sheets <i>Oliver Engels Hassan Lohrasbi, Simon Olschok, Uwe Reisgen, Yingyot Aueulan, Alexander Brezing Institut für Schweißtechnik und Fügetechnik</i> | High-speed process observation of pulsed laser drilling in non-transparent materials <i>Thomas Arnold Patrick Götter, Dominik Wanke, Rudolf Weber, Thomas Graf, Johanna Spörl, Antje Ota, Frank Hermanutz Institut für Strahlwerkzeuge</i> | Optical monitoring and control in laser additive technologies <i>Yuri Chival Merphotonics</i> | | |
| 11:00 - 11:15 | Welding of high thickness steel plates using a fiber coupled diode laser with 50kW of output power <i>Oliver Engels Matthias Weinbach, Simon Olschok, Uwe Reisgen Institut für Schweißtechnik und Fügetechnik</i> | Optimization of key parameters for efficient processing with 100 W femtosecond laser <i>Eric Audouard Giralamo Mincuzzi, Amélie Letan, Konstantin Mischik, Kevin Gaudfrin, Rainer Kling, Eric Mottay, John Lopez AMPLITUDE SYSTEMES</i> | High energy and dual-pulse MOPA laser for selective recovery of non-ferrous metals <i>Youssef Lebour Jordi Juliachs, Carles Oriach MONOCROM SL - ES B60355948</i> | | |
| 11:15 - 11:30 | Adaptive de-noising and smoothing technique for signal in the monitoring of laser welding <i>Giuseppe D'Angelo Giorgio Pasquettaz, Tommaso Giunti Centro Ricerche FIAT</i> | Incubation effect during laser irradiation of stainless steel with bursts of fs-pulses <i>Giuseppe Giannuzzi Caterina Gauduso, Antonio Ancona, Pietro Mario Lugarà University of Bari</i> | Fast high yield cutting of 4 and 6 inch SiC-wafer using Thermal Laser Separation (TLS) <i>Christian Belgardt Reinhard Kosuch, Dirk Lewke, Michael Grimm, Hans-Ulrich Zühke 3D-Micromac</i> | | |
| 11:30 - 11:45 | Low electrical resistance of aluminum to copper joints achieved with temporal and spatial laser beam modulation <i>Michael Jarwitz Florian Fetzer, Rudolf Weber, Thomas Graf Institut für Strahlwerkzeuge, Universität Stuttgart</i> | A Parametric Investigation of Picosecond and Femtosecond Micromachining for Metals and Plastics used in the Medical Device Industry <i>Geoff Shannon Hojin Jang, Brennan DeCesar Amada Miyachi America</i> | Closing the loop – Using Online Monitoring Techniques for an Automated Laser Welding Process Optimization in Industrial Applications <i>Jörg Hermsdorf Michael Huse, George Panoutsos, Benjamin Emde, Adrian Rubio Solis, Stefan Kaerle Laser Zentrum Hannover e.V.</i> | | |
| 11:45 - 12:00 | | Direct writing of zero taper high aspect ratio features on elastomer micromoulds with femtosecond laser <i>Nerea Otero Ramudo Sara Vidal Álvarez, Pablo Romero Romero, Daniel Sanmartin, Tim Button AIMEN</i> | Simultaneous 3D laser processing with mechanical axes and galvanometric scanner <i>John Walter Flemmer Fraunhofer ILT</i> | | |
| Lunch | | Lunch | | Lunch | |

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| <i>Joining (Welding and Brazing) (Tu_2_3), B. Graf</i> | | <i>Ablation, Drilling, and Micro-Cutting (Tu_3_3), A. Ostendorf</i> | | <i>Cutting and CFRP-Processing (Tu_22B_3), T. Graf</i> | |
| 14:00 - 14:15 | Influence of oscillation parameter on melt pool geometry and hot cracking susceptibility during laser beam welding of high strength steels <i>Vincent Mann Matthias Holzer, Konstantin Hofmann, Andreas Korbacher, Stephan Roth, Michael Schmidt Bayerisches Laserzentrum GmbH</i> | Towards near-net shape micro-machining of aerospace materials by means of a water jet-guided laser beam. <i>Jeremie Dibaine Helgi Diehl, Bernhard Richerzhagen Synova SA</i> | | Laser based processing of Fibre Reinforced Plastics as an enabler technology for lightweight solutions (Invited) <i>Oliver Suttmann Verena Wippra, Sven Blümel, Richard Stähr, Hagen Dittmar, Peter Jäschke, Ludger Overmeyer Laser Zentrum Hannover e.V.</i> | |
| 14:15 - 14:30 | Strain behavior during the initiation process of centerline cracks in laser welding of aluminum alloys. <i>Christian Hagenlocher Jonas Nolte, Rudolf Weber, Thomas Graf Institut für Strahlwerkzeuge</i> | Laser based surface and post coating treatment of cutting tools <i>Sebastian Michel Timo Bathe, Ivan Iovkov, Dirk Biermann, Bastian Kuhle, Alexander Kanitz, Cemal Esen Institute of Machining Technology (ISF) / Technical University of Dortmund</i> | | | |
| 14:30 - 14:45 | Laser beam welding of high reflective materials using a short wave length laser beam of 515 nm <i>Dirk Dittrich Jens Liebscher, Philipp Mohlau, Axel Jahn, Jens Stadfuss, Eckhard Beyer Fraunhofer Institute for Material and Beam Technology IWS</i> | Laser manufacturing of carbide micro milling tools <i>Melik Hajri Josquin Pfaff, Claudia Häffner, Konrad Wegener ETH Zurich</i> | | CFRP Bonding pre-Treatment With Laser Radiation of 3 µm Wavelength: Influence of Different Treatment Parameters <i>David Blass Sebastian Nyga, Veronika Katzy, Bernd Jungbluth, Hans-Dieter Hoffmann, Klaus Dilger TU Braunschweig</i> | |
| 14:45 - 15:00 | Laser deep penetration weld seams with high surface quality <i>Villads Schultz Won Ik Cho, Peer Woizeschke, Frank Vollertsen BIAS - Bremer Institut für angewandte Strahltechnik</i> | Selective Ablation of titanium Nitride Film on Tungsten Carbide Substrate Using Ultrashort Laser Pulses <i>Wagner de Rossi Eduardo Spinelli Oliveira, Ricardo Elgul Samad, Nilson Dias Vieira Jr Nuclear and Energy Research Institute</i> | | Process emissions during laser processing of CFRP: measurement of hazardous substances and recommendation of protective measures <i>Juergen Walter Michael Hustedt, Sven Bluemel, Peter Jaeschke, Stefan Kaierle Laser Zentrum Hannover e.V.</i> | |
| 15:00 - 15:15 | Reduction of the spatter formation due to the use of superposition of two laser intensities <i>Falk Nagel Christine Drechsel, Jean Pierre Bergmann TU Ilmenau</i> | Picosecond laser processing for fast cross sectioning and preparation of TEM lamella prior to ion milling polishing <i>Aurélien Sikora Lahouari Fares, Jérôme Adrian, Vincent Goubier, Anne Delobbe, Antoine Corbin, Thierry Sarnet, Marc Sentis LP3/CNRS</i> | | Distance Controlled Laser Ablation of CFRP <i>Steffen Boley Daniel Halder, Matthias Buser, Volkher Onuseit, Thomas Graf, Martin Schönleber Institut für Strahlwerkzeuge</i> | |
| 15:15 - 15:30 | Spatter Occurrence when Using Laser Beam Oscillated Welding for Aluminum <i>Martin Sommer Jan-Philipp Weberpals, Andreas Heider, Mario Prokop Audi AG</i> | Investigations on ultra-short pulse laser processing of ceramics using statistical methods <i>Maria Friedrich Kristina Völlm, Sebastian Wächter, Jens Bliedner ifw - Günter-Köhler-Institut für Fügetechnik und Werkstoffprüfung GmbH</i> | | High-power laser surface processing for fast, reliable repair preparation of CFRP <i>Hagen Dittmar Sven Blümel, Peter Jäschke, Oliver Suttmann, Ludger Overmeyer Laser Zentrum Hannover e.V.</i> | |
| Coffee break | | Coffee break | | Coffee break | |
| <i>Joining (Welding and Brazing) (Tu_2_4), B. Graf</i> | | <i>SLM-Metal (Tu_3_4), I. Smurov</i> | | <i>Cutting and CFRP-Processing (Tu_22B_4), T. Graf</i> | |
| 16:00 - 16:15 | Challenges and Solutions in Copper Processing with High Brightness Fiber Lasers for E-Mobility Applications <i>Michael Grupp Nils Reineremann IPG Laser GmbH</i> | Use of additive manufacturing for high-throughput material development <i>Konstantin Vetter Sven Hohenäcker, Hannes Freijße, Frank Vollertsen BIAS - Bremer Institut für angewandte Strahltechnik</i> | | Determination of the flow speed of the ablation products generated during laser processing of CFRP with a cw-laser by means of high-speed imaging <i>Christian Freitag Sebastian Faas, Steffen Boley, Peter Berger, Rudolf Weber, Thomas Graf Institut für Strahlwerkzeuge</i> | |
| 16:15 - 16:30 | Influence of dual beam on process stability in laser beam welding of high strength aluminum alloy AA 7075 <i>Matthias Holzer Katrin Zapf, Stefan Kronberger, Florian Henkelmann, Vincent Mann, Konstantin Hofmann, Stephan Roth, Michael Schmidt blz - Bayerisches Laserzentrum GmbH</i> | A Fluid-Dynamic Numerical Model for the Selective Laser Melting of High-Thickness Metallic Layers <i>Francisco Cordavilla Miguel Garzón, Diego Alejandro Muñoz, Javier Diaz, Ángel García-Beltrán, José Luis Ocaña Polytechnical University of Madrid</i> | | Swift and accurate - investigation of remote laser cutting for open cell foams <i>Robert Baumann Patrick Herwig, Andreas Wetzig, Eckhard Beyer Fraunhofer IWS</i> | |
| 16:30 - 16:45 | Novel developments for laser beam welding of power train components <i>Axel Jahn Dirk Dittrich, Jens Stadfuss, Eckhard Beyer, Christoph Leyens Fraunhofer IWS</i> | Investigation of Selective Laser Melting Process Dynamics for Single- and Multi-Beam Strategies using High Speed Imaging <i>Thorsten Heeling Marcel Gerstgrasser, Konrad Wegener Institute of Machine Tools and Manufacturing, ETH Zurich</i> | | Dynamic beam shaping for thick sheet metal cutting <i>Cindy Goppold Thomas Pinder, Patrick Herwig Fraunhofer Institute for Material and Beam Technology IWS</i> | |
| 16:45 - 17:00 | Investigations on Laserstabilized Gas Metal Arc Welding using Low Laser Power and Intensity for Thin Plate Welding <i>Jan Leschke Erik Zokoll, Isaiah Becker-Mayer, Jörg Hermsdorf, Stefan Kaierle Laser Zentrum Hannover e.V.</i> | Study on topology optimization design, SLM fabrication and performance of porous structure <i>Dongyun Zhang Beijing University of Technology</i> | | Laser cutting of pure lithium metal anodes <i>Tobias Jansen David Blass, Stefan Kreling, Klaus Dilger TU Braunschweig</i> | |
| 17:00 - 17:15 | Laser beam welding and straightening of Titanium T-joints for aircraft structures <i>Pedro Alvarez Fidel Zubiri, Martin Froend, Fedor Fomin, Stefan Riekehr, Nikolai Kashoiev, Stefan Bauer IKA-LORTEK</i> | Selective laser melting of AISI40 using ultrashort laser pulses for additive manufacturing applications <i>Tobias Ullsperger Gabor Matthäus, Lisa Kaden, Markus Rettenmayr, Stefan Risse, Andreas Tünnermann, Stefan Nolte Friedrich-Schiller-Universität Jena</i> | | Pulsed laser cutting of granite <i>Juan Pou Antonio Riveira, Ana Mejias, Ramón Soto, Félix Quintero, Jesús del Val, Mohamed Boutinguiza, Fernando Lusquiños, Juan Pardo University of Vigo</i> | |
| 17:15 - 17:30 | Advantages of Three-focal Fiber Technology in Laser Brazing of Galvanized Steel <i>Mohammad Darvish Cemal Esen, Holger Mamerow, Andreas Ostendorf Novanta Europe GmbH</i> | Deterministic defect generation in selective laser melting: parametric optimization and control <i>Olivier Andreau Patrice Peyre, Jean-Daniel Penot, Imade Koutiri, Corinne Dupuy, Étienne Pessard, Nicolas Saintier CEA Saclay</i> | | Quantitative Identification of Laser Cutting Quality relying on Visual Information <i>Matteo Pacher Lorenzo Monguzzi, Lorenzo Bartolotti, Maurizio Sbeti, Barbara Previtali Politecnico di Milano</i> | |
| 17:30 - 17:45 | | Experimental and theoretical analysis of thermo-optical effects in protective window for selective laser melting <i>Tobias Bonhoff Maximilian Schniedenharn, Jochen Stollenwerk, Peter Loosen Chair for Technology of Optical Systems, RWTH Aachen</i> | | Optical monitoring of fiber laser based cutting processes for in-situ quality evaluation <i>Iker Garmendia Roberto Ocaña, Carlos Soriano, Jon Lambarri Fundación Tekniker</i> | |
| 19:00 - 23:00 | LiM Get together | LiM Get together | LiM Get together | LiM Get together | LiM Get together |
| | Augustiner Bier Keller | Augustiner Bier Keller | Augustiner Bier Keller | Augustiner Bier Keller | Augustiner Bier Keller |

LiM 2017 Advance Program, Wednesday, 28.6.2017

| ICS Room 2, 1st Floor | |
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| <i>Joining (Welding and Brazing) (We_2_1), B. Graf</i> | |
| 08:30 - 08:45 | Experimental investigations on laser-based hot-melt bonding and injection molding for laser-structured metal plastic hybrids <i>Tobias Laumer Philipp Amend, Michel Wolf, Tina Mrotzek, Stephan Roth, Maik Gude, Michael Schmidt Bayerisches Laserzentrum GmbH</i> |
| 08:45 - 09:00 | Weld Quality Assurance by Keyhole Depth Measurement using Optical Coherence Tomography <i>Jan-Patrick Hermani Friedhelm Darsch, Sven Plaßwich, Patrick Haug TRUMPF Laser- und Systemtechnik GmbH</i> |
| 09:00 - 09:15 | Hybrid Laser-Arc Welding of steel S700MC butt joints under different sheet thickness <i>Egidijus Petronis Georg Cerwenka, Claus Emmelmann Hamburg University of Technology (TUHH)</i> |
| 09:15 - 09:30 | Electromagnetic porosity reduction in laser beam welding of die cast aluminum <i>André Fritzsche Fabian Teichmann, Helge Pries, Kai Hilgenberg, Michael Rethmeier Bundesanstalt für Materialforschung und -prüfung</i> |
| 09:30 - 09:45 | Behavior of laser induced keyhole during dissimilar welding of metals <i>Iryna Tomashchuk Massaud Mostafa, Tobit Coudwell, Pierre Sallamand, Mélanie Duband Université de Bourgogne-Franche Comté</i> |
| 09:45 - 10:00 | Spiking behaviour and capillary instabilities observed during welding of ice <i>Peter W. Berger Florian Fetzer, Haoyue Hu University of Stuttgart</i> |

Coffee break

| <i>Processing of Transparent Materials (We_2_2), D. Oberschmidt</i> | |
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| 10:30 - 10:45 | Towards a comprehensive understanding of nonlinear energy deposition into transparent tissues (Invited) <i>Alfred Vogel Universität zu Lübeck</i> |
| 10:45 - 11:00 | |
| 11:00 - 11:15 | A novel 2 µm Ultrashort Pulsed Laser Source for Selective Laser-Induced Etching of Glass <i>Florian Sotier Wycliffe K. Kipnusu, Martin Hermans, Jens Gottmann, Stephan Geiger, Gerd Marowsky, Katrin R. Siefertmann InnoLas Photonics GmbH</i> |
| 11:15 - 11:30 | Strong Connection: Welding of different kinds of glass using femtosecond laser pulses <i>Simone Russ Christoph Müller, Aleksander Budnicki, Jan Wieduwilt, Michael Lang, Tim Hesse Trumpf Laser GmbH</i> |
| 11:30 - 11:45 | Cutting thin glasses with ultrafast lasers <i>Matthias Domke Giovanni Piredda, Benjamin Bernard, Victor Matylytsky FH Vorarlberg</i> |
| 11:45 - 12:00 | Automated color printing of glass by using a laser-burning process <i>Kristin Plat Philipp von Witzendorff, Oliver Suttmann, Ludger Overmeyer Laser Zentrum Hannover</i> |

Lunch

LiM 2017 Advance Program, Wednesday, 28.6.2017

| ICS Room 3, 1st Floor | |
|--------------------------------------|---|
| <i>SLM-Metal (We_3_1), D. Herzog</i> | |
| | How can AM factories match cost and lead time requirements? Configuration and optimization of AM factories for different production programs. (Invited) <i>Markus Möhrle LZN Laser Zentrum Nord, Hamburg</i> |
| | In situ and real-time monitoring of powder-bed AM by combining acoustic emission and machine learning <i>Kilian Wasmer Sergey A. Shevchik, Christoph Kenel, Fatemeh Saiedi, Christian Leinenbach Empa - Swiss Federal Laboratories for Materials Science and Technology</i> |
| | Influence of SLM Process Parameters and Heat Treatments on the Microstructure and Mechanical Resistance of INCONEL 625 Superalloy <i>Thibaut DE TERRIS Frédéric ADAMSKI, Patrice PEYRE, Corinne DUPUY PIMM</i> |
| | Processing of a high-strength Al-Fe-Ni alloy using laser beam melting and its potential for in-situ graded mechanical properties <i>Gunther Mohr Jan Johannsen, Daniel Knoop, Eric Gärtner, Klaus Hummert Institute of Laser and System Technologies iLAS, Technische Universität Hamburg TUHH</i> |

Coffee break

| <i>SLM-Metal (We_3_2), D. Herzog</i> | |
|--------------------------------------|---|
| | Laser based post processing of additive manufactured metal parts <i>Harald Riegel Markus Hofele, Jochen Schanz, Bahrudin Burzic, Simon Lutz, Markus Merkel Aalen University</i> |
| | Comprehensive analysis of SLM of TiAl powder <i>Igor Smurov Maria Doubenskaya, Alexey Domashenkov, Pavel Petrovskiy ENISE</i> |
| | Experimental investigation of a process chain combining sheet metal bending and laser beam melting of Ti-6Al-4V <i>Florian Huber Lorenz Butzhammer, Patrick Dubjella, Adam Schaub, Markus Aumüller, Alexander Baum, Oleksandra Petrunenko, Marion Merklein, Michael Schmidt Institute of Photonic Technologies - FAU Erlangen-</i> |
| | Geometrical and Topological Potentialities and Restrictions in Selective Laser Sintering of Customized Carbide Precision Tools <i>Tobias Schwaneckamp Markus Bräuer, Martin Reuber Rheinische Fachhochschule Köln gGmbH</i> |
| | Selective Laser Melting of NiTi powder <i>Igor Smurov Alexey Domashenkov, Maria Doubenskaya, Maxim Smirnov, Andrew Travyanov ENISE</i> |
| | Study of resistance of stainless steels manufactured by selective laser melting to pitting and crevice corrosion <i>Olga Parmenova Svetlana Mushnikov, Pavel Kuznetsov, Aleksey Krasikov, Mikhail Staritsyn NRC "Kurchatov Institute" - CRISM "Prometey"</i> |

Lunch

LiM 2017 Advance Program, Wednesday, 28.6.2017

| ICS Room 22B, 2nd Floor | |
|--|--|
| <i>Surface Treatment and Cladding (We_22B_1), M. Zäh</i> | |
| | Resistance modification of diamond through silicon incorporation <i>Markus Prieske Frank Vollertsen BIAS - Bremer Institut für angewandte Strahltechnik GmbH</i> |
| | Influence of Laser Scan Speed on Microhardness and Ablation Resistance of Ti-ZrB2 Cermet Coatings <i>Gabriel Ayokunle Farotade Abimbola Patricia Idowu Popoola Tshwane University of Technology, Pretoria, South Africa</i> |
| | Laser Softening of Ultra-high Strength Steels for Self-piercing Riveting Process <i>Dongsig Shin Sanghoon Ahn, Jaehoon Lee, Jengo Kim, Junho Jang, Shinhu Cho, Jongkook Lee Korea Institute of Machinery and Materials (KIMM)</i> |
| | Laser Hardening of Thin Walled Parts with Cryogenic Cooling <i>Stefan Gröfe Fritz Klocke, Martin Schulz, Gaoyuan Zheng Fraunhofer Institute for Production Technology IPT</i> |
| | Influence of alloying elements on the mechanical properties and defect formation at wire based laser beam alloying of hot-working tool steel <i>Konstantin Hofmann Matthias Halzer, Vincent Mann, Ann-Christin Meyer, Stephan Roth, Michael Schmidt Bayerisches Laserzentrum GmbH</i> |
| | Laser surface texturing of natural stones <i>Adolfo Chantada Joaquin Penide, Pablo Pou, Antonio Riveiro, Jesús del Val, Félix Quintero, Ramón Soto, Fernando Lusquiños, Juan Pou University of Vigo</i> |

Coffee break

| <i>Surface Treatment and Cladding (We_22B_2), M. Zäh</i> | |
|--|--|
| | Surface oxidation of Titanium by cw-Nd:YAG laser <i>Ángel Rodríguez Javier N. Montero, José M. Amado, María J. Tobar, Armando Yáñez University of A Coruña</i> |
| | Quasi-simultaneous local hardness reduction via Remote Laser Scanner for cost-effective mechanical joining of press-hardened high-strength steel 22MnB5 <i>Phillip Surrey Claus Emmelmann, Dmitry Ivanov Technische Universität Hamburg</i> |
| | Surface Finish using Laser-thermochemical Machining <i>Sandro Eckert Frank Vollertsen BIAS - Bremer Institut für angewandte Strahltechnik</i> |
| | Feasibility study for the automation of a Selective Laser Deburring Process <i>Christian Conrad Mauritz Möller, Vishnuu Prakash, Claus Emmelmann Institut of Laser and System Technologies (ILAS)</i> |
| | Evaluation of a Laser-Hot-wire hybrid process for producing deep Net-Shape welds <i>Jonas Näsström Jan Frostevang Luleå University of Technology</i> |

Lunch

Joint session with ECLEO, room "Newton 1" (A31)

Joint session with ECLEO, room "Newton 1" (A31)

| LiM 2017 Advance Program, Wednesday, 28.6.2017 | | LiM 2017 Advance Program, Wednesday, 28.6.2017 | | LiM 2017 Advance Program, Wednesday, 28.6.2017 | |
|---|--|---|--|--|---|
| ICS Room 2, 1st Floor | | ICS Room 3, 1st Floor | | ICS Room 22B, 2nd Floor | |
| <i>Processing of Transparent Materials (We_2_3), D. Oberschmidt</i> | | <i>LIA-Session (We_3_3), J. Sears</i> | | <i>Micro-Joining (Welding and Brazing) (We_22B_3), J.-P. Bergmann</i> | |
| 14:00 - 14:15 | Novel Optical Concept for Large Area Rapid Thermal Processing <i>Christoph Tillkorn Lorenzo Canova, Stefan Dorer, Michael Lang, Martin Huonker TRUMPF Laser GmbH</i> | Humanitarian FabKit (Invited) | <i>David Ott Global Humanitarian Lab (GHL)</i> | Process strategies and heat input in laser welding of metal foams (Invited) | <i>Michael Jarwitz Jens Johannsen, Rudolf Weber, Thomas Graf Institut für Strahlwerkzeuge, Universität Stuttgart</i> |
| 14:15 - 14:30 | Patterning of graphene from ps to fs pulses <i>Giovanni Piredda Matthias Domke, Nicolas Coca Lopez, Achim Hartschuh, Victor Matylytsky, Benjamin Bernard Fachhochschule Vorarlberg</i> | | | | |
| 14:30 - 14:45 | Induction of low-stress and crack-free laser micro holes in sapphire: Optimization of the process parameters under different ambient conditions <i>Christina Gantner Karsten Liebold, Tristan Kaszemeikat, Daniela Schädel, Verena Knappe Laser- und Medizin- Technologie GmbH, Berlin</i> | Material Requirements for Additive Manufacturing (Invited) | <i>William Herbert Carpenter Technology</i> | Stable Conduction and Keyhole Welding of Copper with 275 Watt Blue Laser | <i>Stan Ream Mathew Finuf, Jean Michel Pelaprat, Bill Gray, Mark Steven Zediker Nuburu Inc.</i> |
| 14:45 - 15:00 | Spatio-temporal beam shaping for glass cutting with femtosecond lasers <i>Eric MOTTAY Konstantin MISHCHIK, John LOPEZ, Guillaume DUCHATEAU, Bruno CHASSAGNE, Rainer KLING AMPLITUDE SYSTEMES</i> | Breakthrough Solutions for Additive Manufacturing (Invited) | <i>Robert Martinsen nLIGHT</i> | Micro laser joining of capillary tubes for medical applications using filler metal | <i>T.-E. Adams H. Letsch, P. Moyr Steinbeis-Innovationszentrum Fügetechnik</i> |
| 15:00 - 15:15 | Inducing scattering centers in medical optical fibers by pulses in the range of ps. <i>Alexander Wall Hans-Jürgen Hoffmann, Verena Knappe Laser- und Medizintechnologie GmbH Berlin</i> | | | Control of temperature fields and melt formation in laser transmission welding using adapted laser wavelengths | <i>Andreas Schkutow Thomas Frick Technische Hochschule Nürnberg Georg Simon Ohm</i> |
| 15:15 - 15:30 | | Additive Manufacturing with LMD-CLAD® Process: An Industrial Opportunity (Invited) | <i>Yannick Lafue IREPA Laser</i> | Single mode fiber laser micro joining of dissimilar metals: a comparative study | <i>Benjamin Schmieder Dmitrij Walter, Patrick Mucha, Vasile Raul Moldovan Manz AG</i> |
| Coffee break | | Coffee break | | Coffee break | |
| <i>Processing of Transparent Materials (We_2_4), D. Oberschmidt</i> | | <i>SLM-Metal (We_3_4), D. Herzog</i> | | <i>Micro-Joining (Welding and Brazing) (We_22B_4), J.-P. Bergmann</i> | |
| 16:00 - 16:15 | Single pass cutting of glass substrates >4mm with ultra-short laser pulses <i>Klaus Bergner Jens Ulrich Thomas, Malte Kumkar, Brian Seyfarth, Jonas Schatz, Frank-Thomas Lentens, Herbert Grass, Anne Feuer, Rudolf Weber, Andreas Tünnermann, Stefan Nolte Institute of Applied Physics, Abbe Center of Photonics,</i> | Single crystal microstructure built by Selective Laser Melting | <i>Jiachun Chen Dieter Schwarze, Thomas Niendorf SLM Solutions Group AG</i> | A comparison of IR- and UV-laser pretreatment to increase the bonding strength of adhesively joined Aluminum/CFRP components | <i>Harald Riegel Valentina Reitz, Dieter Meinhard, Simon Ruck, Volker Knoblauch Aalen University</i> |
| 16:15 - 16:30 | Simultaneous Femtosecond Laser Processing of Optical Fiber Glass Cladding and Buffer Coating for Buffered Optofluidic Lab in Fiber Applications <i>Kevin A. J. Joseph Moez Haque, Stephen Ho, J. Stewart Aitchison, Peter R. Herman University of Toronto</i> | Selective Laser Sintering/Melting of Multi-Material Parts | <i>Yuri Chivel Merphotonics</i> | Laser joining of laser-structured metal and plastic components | <i>Johannes Eckstädt Jens Rauschenberger Leister Technologies AG</i> |
| 16:30 - 16:45 | Nanosecond laser ablation of different crystallographic planes of sapphire <i>Fatemeh Saeidi Freidy Mouhamad Ali, Kilian Wasmer Swiss Federal Laboratories for Materials Science and Technology-Empa</i> | Additive Technology of Ceramic Turbomachines Manufacturing | <i>Yuri Chivel Anatoly Sudarev, Vladimir Konakov Merphotonics</i> | Repair of nickel-based superalloys by pulsed Nd:YAG welding with wire feeding | <i>Martin Bielenin Jean Pierre Bergmann Technische Universität Ilmenau</i> |
| 16:45 - 17:00 | Damage mechanisms of ultrashort pulsed laser processing of glass in dependency of the applied pulse duration <i>Christian Kalupka Tim Henrik Holtum, Martin Reininghaus Rheinisch Westfälisch Technische Hochschule Aachen</i> | Optimization of laser welding process for laser additive manufactured aluminum parts by means of beam oscillation and process-oriented component design | <i>Frank Beckmann Prof. Dr.-Ing. Claus Emmelmann Technische Universität Hamburg</i> | Quantification of geometric properties of melting zones in laser welding processes | <i>Björn John Daniel Markert, Norbert Englisch, Marc Prof. Dr. rer. nat. Ritter, Danny Dr. Kowerko, Michael Dr. Grimm 3D-Micromac AG</i> |
| 17:00 - 17:15 | Spatial Phase Manipulation on Shaping Nonlinear Laser Interactions inside Thin-Film and Bulk Glass <i>Ehsan Alimohammadian Stephen Ho, Erden Ertorer, Jianzhao Li, Peter R. Herman University of Toronto</i> | Manufacturing, microstructure and mechanical properties of selective laser melted Ti6Al4V-xCu | <i>P. Krakhmalev A. Kinneer, T.C. Dzugbewu, I. Yadroitsava, I. Yadroitsv Central University of Technology, Free state</i> | Effect of laser assistance in ultrasonic copper wire bonding | <i>Friedrich Schneider Yangyang Long, Hendrik Ohrdes, Jens Twiefel, Michael Brökelmann, Matthias Hunstig, Arjun Venkatesh, Jörg Hermsdorf, Stefan Kaierle, Ludger Overmeyer Laser Zentrum Hannover e.V.</i> |
| 17:15 - 17:30 | Ablative Processing of Fine Features in Transparent Brittle Materials with Ultrashort Laser Pulses <i>Geoffrey Lott Guillaume Lafay, Nicolas Falletto, Pierre-Jean Devilder, Rainer Kling Alphanov</i> | Effect of baseplate temperature on molten titanium particle for development of sputter-less SLM | <i>Yuji Sato Masahiro Tsukamoto, Takahisa Shabu, Yarihiro Yamashita, Shuto Yamagata, Ritsuko Higashino, Shinichiro Masuno, Nobuyuki Abe Osaka University</i> | Welding thin section dissimilar metals with ns pulsed fiber lasers | <i>Jack Gabzdyl SPI Lasers</i> |
| 17:30 - 17:45 | In-volume structuring of silicon using ultrashort laser pulses <i>Helena Kämmer Gabor Matthäus, Stefan Nolte, Margaux Chanal, Olivier Utéza, David Grojo Friedrich-Schiller-Universität Jena</i> | Investigations on laser-based hot-melt bonding of additive manufactured plastic parts to metal sheets for strong and tight multi-material joints | <i>Tobias Laumer Philipp Amend, Florian Baat, Stephan Roth, Michael Schmidt Bayerisches Laserzentrum GmbH</i> | Laser welding of copper alloys using a pulsed laser source at green wavelength | <i>Michael Karl Kick Andreas Ganser, Christian Braun, Eva-Maria Dold, Hans-Peter Tranitz, Alexander Fuchs, Elke Kaiser, Ricus Mueller, Michael Friedrich Zoeh Technisch Universität München</i> |

| LiM 2017 Advance Program, Thursday, 29.6.2017 | | LiM 2017 Advance Program, Thursday, 29.6.2017 | | LiM 2017 Advance Program, Thursday, 29.6.2017 | |
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| ICS Room 2, 1st Floor | | ICS Room 3, 1st Floor | | ICS Room 22B, 2nd Floor | |
| <i>Processing of Transparent Materials (Th_2_1), D. Oberschmidt</i> | | <i>SLM-Metal (Th_3_1), G. Mohr</i> | | <i>Fundamentals and Process Simulation (Th_22B_1), S. Nolte</i> | |
| 08:30 - 08:45 | | Selective laser melting of copper using ultrashort laser pulses | Lisa Kaden Gabor Matthäus, Tobias Ullsperger, Stefan Nolte Institut of Applied Physics, Friedrich-Schiller-Universität Jena | Numerical simulation of WC particles distribution in laser melt injection with external electromagnetic field support | Liang Wang Jianhua Yao, Yong Hu, Qunli Zhang, Rong Liu Zhejiang University of Technology |
| 08:45 - 09:00 | Laser Sintering of Silica Soot Sheet <i>Xinghua Li Daniel W Hawtaf, Archit Lal Corning Reseach & Development Corporation</i> | Microstructure and mechanical properties of additive manufactured aluminium alloys Scalmalloy® and Silmagal® | Katja Schmitke Frank Palm, Claus Emmelmann Airbus Defence and Space GmbH | Hybrid joining of high reflective and thin metal substrates with polymers by laser micro-structuration with short and ultra-short pulsing lasers | Anne Henrotin Jérôme Patars, Jose Antonio Ramos-de-Campos LASEA |
| 09:00 - 09:15 | Laser-based Process for Polymeric Coatings on Temperature-Sensitive Metallic Components <i>Hendrik Sändker Jochen Stollenwerk, Peter Loosen Fraunhofer-Institute for Laser Technology</i> | Materials Characterization of Additively Manufactured 316L Stainless Steel Parts | Stephen G. L. Nestor Jordan M. R. Solomon, Mark R. Daymond, James M. Fraser Queen's University | Enhancement of the area rate for laser macro polishing by using non-rotational symmetric intensity distributions | Judith Kumstel Sven Lüken Fraunhofer Institute for Laser Technology |
| 09:15 - 09:30 | Additive manufacturing by UV laser direct writing of UV-curable PDMS <i>Kotaro Obata Yasutaka Nakajima, Arndt Hohnholz, Jürgen Koch, Mitsuhiro Terakawa, Oliver Suttman, Ludger Overmeyer Laser Zentrum Hannover e.V.</i> | Influence of laser power fluctuations on the quality of additive manufactured workpieces | Martin Heintl Bogdan Galovskiy, Florian Bayer, Tobias Laumer, Tino Hausotte Friedrich-Alexander-Universität Erlangen-Nürnberg | Layer-selective laser-lift off and removal mechanism in a TCO/Si thin film system by nano- to femtosecond pulses | Stephan Krause Paul-Tiberiu Miclea, Kai Kaufmann, Christian Hagendorf, Nadezhda M. Bulgakova Anhalt University of Applied Science/Fraunhofer CSP |
| 09:30 - 09:45 | Direct Femtosecond Laser Irradiation of Polymeric Substrates for High Resolution Ink-jet Printing of Conductive Lines <i>Mikel Gomez-Aranzadi Ainara Rodriguez, Miguel Martinez-Calderon, Itziar Fraile, Santiago Miguel Olaizola, Irene Castro-Hurtado Ceit-ik4</i> | Ultra-short-pulse laser for the production of three-dimensional microstructures for implants and BioMEMS utilizing two-photon-polymerization | Eric Markweg Norman Petzold, Thomas Kowallik TETRA Gesellschaft für Sensorik, Robotik und Automation mbH | Improving the understanding of ultrafast laser processing of metals by experimental and simulated transient studies of reflectivity and absorption | Heinz P. Huber Jan Winter, Stephan Rapp, Rudolph Reiel Munich University of Applied Sciences |
| 09:45 - 10:00 | Telecentric CO2 laser ring-cutting system with adjustable diameter <i>Matthias Kraus Erik Förster, Patrick Bohnert, Roland Kilper, Ute Müller, Martin Buchmann, Robert Brunner Ernst-Abbe-Hochschule Jena</i> | Monitoring of powder flow dynamic behavior in LMD processes by high speed imaging. | Javier Nicolás Montero Ángel Rodríguez, José Manuel Amado, María José Tobar, Armando Yáñez University of A Coruña | High speed and high power laser material processing: First determination of process limits | Jens Hildenhagen Paul Bant, Klaus Dickmann University of Applied Sciences Muenster |
| Coffee break | | Coffee break | | Coffee break | |
| <i>Surface Functionalization (Th_2_2), R. Weber</i> | | <i>Laser Metal Deposition (Th_3_2), S. Kaierle</i> | | <i>System Technology and Process Control (Th_22B_2), A. Gillner</i> | |
| 10:30 - 10:45 | Diamond surface functionalization induced by laser nanoablation (Invited) <i>Vitaly Ivanovich Konov Vitali Viktorovich Kononenko, Igor Ivanovich Vlasov General Physics Institute</i> | Additive Manufacturing: Generating and Printing (Invited) | Elena Lopez Fraunhofer IWS, Dresden | Process stability of laser induced plasma for hardness measurements | Tobias Markus Czotscher Frank Vollertsen BIAS GmbH |
| 10:45 - 11:00 | | | | Application of laser-spectroscopy on organic photovoltaic devices | Shyama Prasad Banerjee Thierry Sarnet, Marc Sentis, Thomas Kuntze, Henri Fliederer, Ahmed Salem, Hylke Akkerman, Niels Friedrich-Schilling, Benedikt Gburek, Merve Anderson, Stéphane Cros |
| 11:00 - 11:15 | Surface functionalization of metals by laser texturing for adhesive joints <i>Nerea Otero Ramudo Sara Vidal Álvarez, Pilar Rey Rodriguez, Ivetta Coto Moretti, Pablo Romero Romero AIMEN</i> | Characterization of microstructural and physical properties of iron-tungsten alloy synthesized by LAAM | Gujun Bi Baicheng Zhang, Pei Wang, Youxiang Chew, Jie Song, Jiaming Bai, Hui-chi Chen, Seung Ki Moon Singapore Institute of Manufacturing Technology | Application of two-photon polymerization technique for resonator-based biosensors fabrication | Anton Saetchnikov Vladimir Saetchnikov, Elina Tcherniavskaia, Andreas Ostendorf Ruhr University Bochum |
| 11:15 - 11:30 | A novel method of laser doping to poly-Si thin films using XeF excimer laser irradiation in acid solution <i>Nozomu Tanaka Akira Suwa, Daisuke Nakamura, Taizoh Sadoh, Hiroshi Ikenoue Kyushu University</i> | Development of a High-speed and High-resolution 3D Printer by Using Laser Metal Deposition Technology | Yasutomo Shimi Hiroshi Ohno, Naotada Okada, Shimpei Fujimaki, Kazuki Wada Toshiba corp. | Laser scribing of alumina ceramics by Nd:YAG and ytterbium fiber laser | Lenka Rihakova Hana Chmelickova RCPTM, Joint Laboratory of Optics of Palacký University and Institute of Physics CAS, Faculty of Science, Palacký University |
| 11:30 - 11:45 | Tamper-proof holographic markings for high-value goods <i>Krzysztof L. Włodarczyk Marcus Ardron, Andrew Waddie, Mohammad Taghizadeh, Nick Weston, Duncan P. Hand Heriot-Watt University</i> | Temperature evolution of different travel path strategies to build layers using Laser Metal Deposition | Torsten Petrat Rene Winterkorn, Benjamin Graf, Andrey Gumenyuk, Michael Rethmeier Fraunhofer Institute for Production Systems and Design Technology IPK | Synthesis and resizing silver nanoparticles by laser ablation in liquids | Mónica Fernández Jesús del Val, Mohamed Boutinguiza, Antonio Riveiro, Rafael Comesaña, Fernando Lusquiños, Juan Pou University of Vigo |
| 11:45 - 12:00 | Femtosecond laser micropatterning of diamond-like nanocomposite coatings to improve friction on the microscale <i>Sergei M. Pimenov Evgeny V. Zavedeev, Olga S. Zilova, Mikhail L. Shupegin, Beat Jaeggi, Beat Neuenschwander General Physics Institute</i> | Performance of Hot Forging Tools Built by Laser Metal Deposition of Hot Work Tool Steel X37CrMoV5-1 | Daniel Junker Oliver Hentschel, Schramme Ralph, Michael Schmidt, Marion Merklein Friedrich-Alexander-Universität | | |
| Lunch | | Lunch | | Lunch | |

| LiM 2017 Advance Program, Thursday, 29.6.2017 | | LiM 2017 Advance Program, Thursday, 29.6.2017 | | LiM 2017 Advance Program, Thursday, 29.6.2017 | |
|---|---|---|---|--|--|
| ICS Room 2, 1st Floor | | ICS Room 3, 1st Floor | | ICS Room 22B, 2nd Floor | |
| <i>Surface Functionalization (Th_2_3), V. Konov</i> | | <i>Laser Metal Deposition (Th_3_3), I. Alfred</i> | | <i>Fundamentals and Process Simulation (Th_22B_3), F. Vollertsen</i> | |
| 14:00 - 14:15 | Applying laser dispersion and laser ablation to generate functional layers for deep drawing tools <i>Hannes Freilje Konstantin Vetter, Thomas Seefeld, Frank Vollertsen BIAS</i> | Laser metal deposition of high entropy alloys using elemental powders and in situ alloying <i>Henrik Döbelstein David Pflüging, Evgeniy L. Gurevich, Guillaume Laplanche, Easo P. George, Andreas Ostendorf Applied Laser Technologies, Ruhr-University Bochum</i> | State of the art of finite element modelling of the welding process (Invited) <i>Andreas Otto TU Vienna</i> | | |
| 14:15 - 14:30 | Influence of Pulse Duration and Scanning Direction on the Deformation of Edges during Laser Micro Polishing <i>Christian Nüssler Simon Schneider Fraunhofer-Institut für Lasertechnik ILT</i> | Laser metal deposition of magnesium alloys <i>Josephin Enz Anna Konovalova, Marco Schultz, Stefan Riekehr, Volker Ventzke, Nikolai Kashaev Helmholtz-Zentrum Geesthacht - Centre for Materials and Coastal Research</i> | Experimental and numerical investigation of the capillary front and side walls during laser beam welding <i>Florian Fetzer Haoyue Hu, Rudolf Weber, Thomas Graf Universität Stuttgart</i> | | |
| 14:30 - 14:45 | Generation of functional sub-µm sphere patterns on quartz substrates using fs-laser <i>Sandra Stroj Volha Matylytskaya, Victor Matylytsky, Stephan Kosemann, Matthias Domke Vorarlberg University of Applied Sciences</i> | Characterization and Optimization of Residual Stress State, Geometrical Accuracy and Productivity for Laser Metal Deposition of Complex Three-Dimensional Titanium Parts <i>Mauritz Möller Christoph Scholl, Vishnuu Prakash, Claus Emmelmann Bionic Production GmbH</i> | Dynamic Method for Determination of Coupling Efficiencies in Laser Material Processing <i>Dominik Hipp Achim Mahle, Eckhard Beyer TU Dresden</i> | | |
| 14:45 - 15:00 | Ultra-fast multi-spot-parallel processing of functional micro- and nano-structures on embossing dies with ultrafast lasers <i>Stephan Brünig Manfred Jarczyński, Thomas Mitra, Keming Du, Christian Fornaroli, Arnold Gillner Schepers GmbH & Co KG</i> | Laser Metal Deposition of Ti-6Al-4V Structures: New Building Strategy for a Decreased Shape Deviation and its Influence on the Microstructure and Mechanical Properties <i>Markus Heilemann Mauritz Möller, Claus Emmelmann, Irmela Burkhardt, Stefan Riekehr, Volker Ventzke, Nikolai Kashaev, Josephin Enz TUHH ILAS</i> | Thermal & Fluid Field Modelling for Laser Aided Additive Manufacturing <i>Youxiang Chew Jie Song, Guijun Bi, Hui-chi Chen, Xiling Yao, Baicheng Zhang, Jiaming Bai, Zhaoqin Guo, Seung Ki Moon Singapore Institute of Manufacturing Technology</i> | | |
| 15:00 - 15:15 | Scanning strategy of high speed shifted laser surface texturing <i>Denys Moskal Jiri Martan, Martin Kučera University of West Bohemia</i> | Closed loop control system for Laser Metal Deposition applied to parts of variable thickness. <i>Jordi Figueras Laura Huarte-Mendicoo, Sonia Moralejo IK4-IDEKO</i> | Interaction of powder jet and laser beam in blown powder laser deposition processes: Measurement and simulation methods <i>Florian Wirth Sebastian Freilse, Daniel Eisenbarth, Konrad Wegener ETH Zürich</i> | | |
| 15:15 - 15:30 | Surface structuring with a 500 W picosecond laser <i>Sebastian Faas Corrado Sciancalepore, Rudolf Weber, Luca Romoli, Thomas Graf IFSW</i> | Adapted approach of the product development process for hybrid manufactured parts <i>Ake Ewald Mauritz Möller, Josef Schlattmann Hamburg University of Technology (TUHH)</i> | | | |
| Coffee break | | Coffee break | | Coffee break | |
| <i>Surface Functionalization (Th_2_4), C. Freitag</i> | | <i>Laser Metal Deposition (Th_3_4), I. Alfred</i> | | <i>Fundamentals and Process Simulation (Th_22B_4), P. Woizeschke</i> | |
| 16:00 - 16:15 | Application specific intensity distributions for laser functionalization of (nano-)ceramic coatings as wear protection <i>Annika Völl Susanne Wollgarten, Jochen Stollenwerk, Peter Loosen Chair for Technology of Optical Systems, RWTH Aachen University</i> | Effects of Heat Treatment on the microstructure of the in-situ Laser Metal Deposited Ti-Al-Nb <i>Monnamme Tlotleng Thabo Lengopeng, Sisa Pityana Council for Scientific and Industrial Research</i> | Pulsed Nd:YAG laser drilling of alumina ceramics and silicon wafers <i>Hana Chmelickova Martina Havelkova, Helena Híklava, Lenka Rihakova Institute of Physics of the Academy of Sciences of the Czech Republic</i> | | |
| 16:15 - 16:30 | Combination of laser surface texturing and PVD coating for cold forming tools <i>Jasu Leunda Carmen Sanz, Jon Etxarri IK4-Tekniker</i> | High speed laser metal deposition process: development of technology and equipment using robotic systems <i>Gleb Andreevich Turichin Olga Klimova-Korsmik, Evgeniy Zemlyakov, Konstantin Babkin, Ekaterina Valdaitseva Saint-Petersburg State Marine Technical University</i> | Simulation of the buttonhole formation during laser welding with wire feeding and beam oscillation <i>Won-ik Cho Villads Schultz, Frank Vollertsen Bremer Institut für angewandte Strahltechnik</i> | | |
| 16:30 - 16:45 | Fabrication of bionic surfaces with mixed superhydrophobic and superhydrophilic properties using fs-lasers <i>Matthias Domke Elisabeth Kostal, Stephan Kosemann, Victor Matylytsky, Sandra Stroj FH Vorarlberg</i> | Design recommendations for laser metal deposition of thin wall structures in TiAl6V4 <i>Hannes Zapf Niels Bendig, Mauritz Möller, Claus Emmelmann Laser Zentrum Nord</i> | Nucleate boiling in laser beam welding of aluminum alloys <i>Florian Hugger Matthias Holzer, Stephan Roth, Michael Schmidt BBW Lasertechnik GmbH</i> | | |
| 16:45 - 17:00 | Water condensation enhancement over metallic hierarchical surfaces with controlled wettability fabricated by femtosecond laser <i>Miguel Martínez Calderon Mikel Gómez Aranzadi, Ainara Rodriguez, Eduardo Granados, Santiago Olaizola CEIT-IK4 VAT: ESG20079695</i> | Blue direct diode laser induced pure copper layer formation on stainless steel plate for reduction of heat affected zone <i>Masanori Sengoku Masahiro Tsukamoto, Kahei Asano, Yuji Sato, Ritsuko Higashino, Yoshinari Funada, Minoru Yoshida, Nobuyuki Abe Kindai university</i> | Numerical modeling of laser welding process of NiTi shape memory alloy <i>Mehrshad Mehrpouya Annamaria Gisario, Mohammad Elahinia Sapienza University of Rome</i> | | |
| 17:00 - 17:15 | Advances in spatial beam shaping for ultrafast laser surface functionalization <i>Cyril Maclair Hélène Desrus, Dorian Saint Pierre Laboratoire H Curien - Manutech-USD</i> | Micro-Hardness measurements of the heat-treated TiAl-Nb synthesised using Laser Metal Deposition Technique <i>Lerato Tshabalala Monnamme Tlotleng, Thabo Lengopeng, Sisa Pityana, Ntombi Mathe Council for Scientific and Industrial Research</i> | Recent Advances in the Multiphysical Simulation of Laser Assisted Manufacturing Processes <i>Rodrigo Gómez Vázquez Andreas Otto, Jaka Peterneil Technische Universität Wien</i> | | |
| 17:15 - 17:30 | Femtosecond-Laser-Induced Surface Texturing of Al-Si Alloy for Lower Friction Surface <i>Masayuki Fujita Toshihiro Sormekawa, Minoru Yoshida, Noriaki Miyanaga, Takuya Nakase, Takashi Kobayashi Institute for Laser Technology</i> | Affecting Transmission NVH-Behavior by Implementing a Damping System Using Additive Manufacturing <i>Matthias Schmitt Tobias Kamps, Gunther Reinhart Fraunhofer IGCV</i> | Modelling and measurement of keyhole laser welding applied to titanium alloy Ti6Al4V <i>Josefine Svenungsson Mats Högström, Isabelle Choquet, Alexander Kaplan University West</i> | | |
| 17:30 - 17:45 | | | | | |